Amendments to the Claims

Please amend Claims 1 and 8. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A heat loss gauge for measuring gas pressure in an environment comprising:

a resistive sensing element;

a resistive compensating element in circuit with the sensing element and having temperature response and physical characteristics substantially matching those of the resistive sensing element and being exposed to a substantially matching environment;

an electrical source connected to the sensing element and compensating element for applying ~~current~~ currents through the elements, the currents having a defined ratio, the current through the sensing element being substantially greater than the current through the compensating element; and

measuring circuitry connected to the sensing element and the compensating element for determining gas pressure in the environment to which the sensing element and compensating element are exposed based on electrical response of the sensing element and the compensating element.

2. (Original) The gauge of Claim 1 wherein separate DC currents flow through the sensing element and the compensating element.

3. (Original) The gauge of Claim 2 wherein the current through the compensating element is a predetermined fraction of the current through the sensing element.

4. (Original) The gauge of Claim 1 further comprising feed back circuitry for controlling the currents through the sensing element and the compensating element to maintain a defined

relationship between the resistances of the sensing element and the compensating element.

5. (Original) The gauge of Claim 4 wherein the compensating element is in series with a non-temperature-sensitive resistive element.

6. (Original) The gauge of Claim 5 wherein the electrical source applies current to heat the sensing element to a temperature at which the resistance of the sensing element matches the combined resistance of the compensating element and the non-temperature-sensitive resistive element.

7. (Original) The gauge of Claim 6 wherein a fixed ratio is maintained between the current applied to the sensing element and the current applied to the compensating element.

8. (Currently Amended) The gauge of Claim 7 wherein the voltage across the sensing element and the voltage across the compensating element and non-temperature-sensitive resistive element are multiplied by multipliers having a ratio inversely related to the ratio of the currents to the sensing element and the compensating element, the resulting voltages [[for]] being compared in the feedback circuitry.

9. (Original) The gauge of Claim 1 wherein the electrical source applies current to heat the sensing element to a temperature at which the resistance of the sensing element matches the combined resistance of the compensating element plus a constant number of ohms.

10. (Original) The gauge of Claim 9 wherein the compensating element is in series with a non-temperature-sensitive resistive element.

11. (Original) A heat loss gauge for measuring gas pressure in an environment comprising:

a resistive sensing element;

a resistive compensating element in circuit with the sensing element and being exposed to a substantially matching environment;

an electrical source connected to the sensing element and compensating element for applying currents through the elements, the currents having a defined ratio, the current through the sensing element being substantially greater than the current through the compensating element; and

measuring circuitry connected to the sensing element and the compensating element for determining gas pressure in the environment to which the sensing element and compensating element are exposed based on electrical response of the sensing element and the compensating element.

12. (Original) The gauge of Claim 11 wherein separate currents flow through the sensing element and the compensating element.

13. (Original) The gauge of Claim 12 wherein separate DC currents flow through the sensing element and the compensating element.

14. (Original) The gauge of Claim 13 wherein the current through the compensating element is a predetermined fraction of the current through the sensing element.

15. (Original) The gauge of Claim 11 further comprising feed back circuitry for controlling the currents through the sensing element and the compensating element to maintain a defined relationship between the resistances of the sensing element and the compensating element.

16. (Original) The gauge of Claim 15 wherein the compensating element is in series with a non-temperature-sensitive resistive element.

17. (Original) The gauge of Claim 16 wherein the electrical source applies current to heat the sensing element to a temperature at which the resistance of the sensing element matches the combined resistance of the compensating element and the non-temperature-sensitive resistive element.

18. (Original) The gauge of Claim 17 wherein a fixed ratio is maintained between the current applied to the sensing element and the current applied to the compensating element.

19. (Original) The gauge of Claim 18 wherein the voltage across the sensing element and the voltage across the compensating element and non-temperature-sensitive resistive element are multiplied by multipliers having a ratio inversely related to the ratio of the currents to the sensing element and the compensating element, and the resulting voltages are compared in the feedback circuitry.

20. (Original) The gauge of Claim 11 wherein the electrical source applies current to heat the sensing element to a temperature at which the resistance of the sensing element matches the combined resistance of the compensating element plus a constant number of ohms.

21. (Original) The gauge of Claim 20 wherein the compensating element is in series with a non-temperature-sensitive resistive element.

22. (Original) A method of forming a heat loss gauge for measuring gas pressure in an environment comprising:

providing a resistive sensing element;

providing a resistive compensating element in circuit with the sensing element and having temperature response and physical characteristics substantially matching those of the resistive sensing element and being exposed to a substantially matching environment;

connecting an electrical source to the sensing element and compensating element for applying currents through the elements, the currents having a defined ratio, the current through the sensing element being substantially greater than the current through the compensating element; and

connecting measuring circuitry to the sensing element and the compensating element for determining gas pressure in the environment to which the sensing element

and compensating element are exposed based on electrical response of the sensing element and the compensating element.

23. (Original) A method of forming a heat loss gauge for measuring gas pressure in an environment comprising:

providing a resistive sensing element;

providing a resistive compensating element in circuit with the sensing element and being exposed to a substantially matching environment;

connecting an electrical source to the sensing element and compensating element for applying currents through the elements, the currents having a defined ratio, the current through the sensing element being substantially greater than the current through the compensating element; and

connecting measuring circuitry to the sensing element and the compensating element for determining gas pressure in the environment to which the sensing element and compensating element are exposed based on electrical response of the sensing element and the compensating element.

24. (Original) A method of measuring gas pressure in an environment comprising:

providing a resistive sensing element;

providing a resistive compensating element in circuit with the sensing element and having temperature response and physical characteristics substantially matching those of the resistive sensing element and being exposed to a substantially matching environment;

applying currents through the sensing element and compensating element from an electrical source, the currents having a defined ratio, with the current through the sensing element being substantially greater than the current through the compensating element; and

with measuring circuitry connected to the sensing element and the compensating element, determining gas pressure in the environment to which the sensing element and

compensating element are exposed based on electrical response of the sensing element and the compensating element.

25. (Original) A method of measuring gas pressure in an environment comprising:

providing a resistive sensing element;

providing a resistive compensating element that is in circuit with the sensing element and is exposed to a substantially matching environment;

applying currents through the sensing element and compensating element from an electrical source, the currents having a defined ratio, with the current through the sensing element being substantially greater than the current through the compensating element; and

with measuring circuitry connected to the sensing element and the compensating element, determining gas pressure in the environment to which the sensing element and compensating element are exposed based on electrical response of the sensing element and the compensating element.

26. (Original) The method of Claim 25 further comprising applying separate currents through the sensing element and the compensating element.

27. (Original) The method of Claim 26 further comprising applying separate DC currents through the sensing element and the compensating element.

28. (Original) The method of Claim 27 further comprising applying current through the compensating element that is a predetermined fraction of the current through the sensing element.

29. (Original) The method of Claim 25 further comprising controlling the currents through the sensing element and the compensating element with feed back circuitry to maintain a defined relationship between the resistances of the sensing element and the compensating element.

30. (Original) The method of Claim 29 further comprising connecting the compensating element in series with a non-temperature-sensitive resistive element.

31. (Original) The method of Claim 30 further comprising applying current from the electrical source to heat the sensing element to a temperature at which the resistance of the sensing element matches the combined resistance of the compensating element and the non-temperature-sensitive resistive element.

32. (Original) The method of Claim 31 further comprising maintaining a fixed ratio between the current applied to the sensing element and the current applied to the compensating element.

33. (Original) The method of Claim 32 further comprising:

multiplying the voltage across the sensing element and the voltage across the compensating element and non-temperature-sensitive resistive element by multipliers having a ratio inversely related to the ratio of the currents to the sensing element and the compensating element; and

comparing the resulting voltages in the feedback circuitry.

34. (Original) The method of Claim 25 further comprising applying current from the electrical source to heat the sensing element to a temperature at which the resistance of the sensing element matches the combined resistance of the compensating element plus a constant number of ohms.

35. (Original) The method of Claim 34 further comprising connecting the compensating element in series with a non-temperature-sensitive resistive element.